

BUCKING BRONCO AT THE RAMIP

by Ltjg. Jeffery Menna

Photo by PH3 Christopher Mobley
Photo-modification by Allan Amen

Just when I was about to fly away, my hook snagged the 1 wire, and the jet suddenly stopped.

It was a miserable day in the Sea of Japan, and it was only going to get worse. We were finishing up Foal Eagle '99 off the coast of Korea. The weather was as bad as any we'd seen since this short cruise began: a bitter cold day, with an 800-foot overcast ceiling and driving rain. Because of the weather and my relative inexperience in such conditions (all my flight training had been accomplished in sunny Corpus Christi, Kingsville and Jacksonville), I kept a close eye on things that usually did not occupy my scan. I looked for icing on the leading edges of my wings, and checked my engine anti-ice and pitot heat switches.

The tactical portion of the flight went as planned. I checked into marshal and received instructions to hold at 6,000 feet. Knowing there was a thick cloud layer at that altitude, I elected to hold above the overcast until just prior to push time, in order to stay out of the visible moisture and possible icing conditions. Had I paid closer attention to the

ship's weather brief and known where the freezing layers were, perhaps I would have had nothing to worry about. Instead I started to get behind the jet as I entered my holding altitude, and I hadn't even begun the approach yet.

During my one quick turn in holding, I kept checking the leading edges of my wings for icing. I had never been in icing conditions, nor had I never seen it accumulate on my wings.

I pushed on time, and everything seemed to be going as planned. I leveled off at 1,200 feet, still in the clag and still not keeping my normal scan. My normal habit pattern was to use the baro-altitude-hold feature of the autopilot only in marshal, then use only auto throttles during the push and when inbound under 1,200 feet. This approach would be different.

As I was transitioning the aircraft to the landing configuration, Approach contacted me with some extraneous instructions. Since I still felt behind the jet, I started to

select (colonize) baro altitude hold so I wouldn't have to worry about altitude while I was coordinating with Approach. But as I was doing this, I realized the instructions were benign and quickly deselected (decolonized) the baro altitude hold, using the up-front control (UFC) scratchpad, without thinking a thing about it. As Hornet pilots know, the right way to make sure you have disengaged all autopilot modes is to press the paddle switch on the control stick. There were two telltale indicators that the autopilot was still functioning in some capacity. I would fail to recognize both.

As I now know, here's what happens when you improperly deselect an autopilot mode using the UFC. An A/P advisory appears at the bottom of the DDI, indicating that the aircraft is still in a control-stick-steering mode. Control-stick steering is like being in attitude hold. When small pitch and bank inputs are made, the jet holds that attitude. NATOPS warns that landing in this mode could cause severe pilot-induced oscillations. I didn't notice the A/P advisory.

As I dirtied up at eight miles and began to trim the aircraft using the Bit MI page, I did notice the second sign that something peculiar was happening. As I trimmed to 3,200 on the Bit MI page, I noticed that the digits would not hold at exactly 3,200, but fluctuated plus or minus 100. To a Hornet pilot with half a brain, this should obviously have indicated that the plane was still in an autopilot mode. The plane was constantly trimming for one G flight, thus changing the trim setting. When I saw the fluctuating trim setting, I didn't give myself time to think about what I was seeing and figure it out. It was getting down to the short hairs of the approach, and I was distracted—nay, obsessed—by icing. I never came back to the Bit MI page to solve the mystery, and I never noticed the A/P advisory on the bottom of the DDI. I was going to have to do my best, trying to land a fly-by-wire aircraft onboard an aircraft carrier in bad weather, with the jet still in autopilot.

It was a typical day at the boat in bad weather. I had no needles, no ILS glideslope, and the ship only gave me an ASR approach down to 600 feet. I made a smooth tip over at three miles and didn't notice the jet handling any differently. Having backed out of the autopilot mode, there was no master caution light or AUTOPILOT caution when I pushed out of 1,200 feet. The approach to the ball call went smoothly, and the jet handled normally. I broke out of the clouds at 700 feet and began working on my lineup, while flying my self-contained numbers to get to a good start. Approach told me to call the ball, and I began to transition

to the lens. "Two Oh Four...clara." I couldn't see the ball because of all of the rain.

"You're high." So much for my self-contained numbers to a good start.

"You're on lineup, you're a little high..."
"Ball."

"Roger ball." Things seemed to be going pretty well, now that I was back on glideslope and making small and deliberate corrections. Then, as I hit the rooster tail, I felt my rate of descent decrease, and the ball began to rise. I made a quick, power-off correction and a quick influence-down with the nose. As I did this, the jet felt as though it was trying to push up with the nose as I was trying to push down. Then I was through the rooster tail and into the burble where I began to make the opposite correction of pulling back on the stick and adding power. Again the jet fought me in the opposite direction, and the magnitude of the oscillations began to get larger. Because the control-stick steering was engaged, the jet was trying to keep one G on the aircraft and was trimming in the opposite direction of my inputs.

The jet made one last, large, nose-down pitch with the stabilators moving full throw, and I was looking at a glare shield full of flight deck. All I could think to do was to get out of this bad situation and try again. Attempting my own waveoff, I lit the blowers and let go of the stick to let the jet settle down. The nose began a final nose up pitch, and just when I was about to fly away, my hook snagged the 1 wire, and the jet suddenly stopped.

Things could have ended much worse than they did: I could have lost the jet and killed myself. Having recently finished LSO School, I had seen the same autopilot landings on board ships. I'd witnessed what can happen when the final oscillation prior to touchdown is a nose-down pitch, resulting in extensive damage to the nose gear, with the pilot lucky to have caught a wire.

It is now part of my scan to hit the paddle switch when I tip over from 1,200 feet on an approach. I randomly hit the paddle switch throughout a flight so as to make sure that I am never in an autopilot mode when I don't want to be. When I think of uncontrolled pitch movements in the landing configuration, the first thing that comes to my mind is hitting the paddle switch.

We need to use our experience and judgment to make good decisions when they really count—especially during the takeoff and landing phases of flight. You won't have enough time to make the right decisions unless you've gone over emergency scenarios and asked yourself what you'd do. 🛩️

Ltjg. Menna flies with VFA-27.